

ATTY. DOCKET NO. PRES06-00251

PATENT

WHAT IS CLAIMED IS:

1. A surgical blade for use with a surgical tool for making an incision in scleral tissue of an eye, said surgical blade comprising:

5 a rotatable support arm having a first end capable of being coupled to a drive shaft of said surgical tool that is capable of rotating said rotatable support arm; and

a curved cutting blade having a first end detachably coupled to a second end of said rotatable support arm, said curved
10 cutting blade having a second end that is capable of being rotated by said surgical tool through said scleral tissue of said eye to make an incision having the form of a scleral pocket that is capable of receiving a scleral prosthesis.

15 2. A surgical blade as claimed in Claim 1 wherein said curved cutting blade of said surgical blade is capable of making an incision in said scleral tissue that is approximately one and one half millimeters wide and approximately four millimeters long, said incision being located approximately four hundred
20 microns under a surface of said scleral tissue.

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3. A surgical blade as claimed in Claim 1 wherein said first end of said curved cutting blade of said surgical blade comprises an extension having portions that form an aperture through said extension.

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4. A surgical blade as claimed in Claim 3 further comprising a string-like connector capable of tying a scleral prosthesis to said extension of said curved cutting blade.

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5. A method for making an incision in scleral tissue of an eye to form a scleral pocket to receive a scleral prosthesis and for placing said scleral prosthesis within said incision, said method comprising the steps of:

5 placing on said scleral tissue of said eye a rotatable surgical blade of a surgical tool, said rotatable surgical blade comprising a rotatable support arm and a curved cutting blade having a first end detachably coupled to an end of said rotatable support arm, said curved cutting blade having a second end that
10 is capable of being rotated by said rotatable support arm through said scleral tissue of said eye to make an incision having the form of a scleral pocket;

holding said scleral tissue to restrain movement of said scleral tissue;

15 rotating said curved cutting blade in a forward direction to cause said curved cutting blade to pass through said scleral tissue to form said incision having said form of a scleral pocket;

detaching said curved cutting blade from said rotatable
20 support arm while said curved cutting blade is located within said incision; and

removing said curved cutting blade from said incision by pulling said curved cutting blade out of said incision in a forward direction.

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6. A method as claimed in Claim 5 further comprising the steps of:

attaching a scleral prosthesis to an extension of said first
5 end of said curved cutting blade before said curved cutting blade
is rotated into said scleral tissue to form an incision; and

pulling said scleral prosthesis into said incision after
said curved cutting blade has been detached from said from said
rotatable support arm and has been removed from said incision.

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7. A method as claimed in Claim 6 wherein said step of
attaching a scleral prosthesis to an extension of said first end
of said curved cutting blade comprises the step of:

tying said scleral prosthesis to said extension of said
15 first end of said curved cutting blade using a string-like
connector.

8. A method as claimed in Claim 5 further comprising the
step of:

20 attaching said detachable curved cutting blade to said
rotatable support arm after said detachable curved cutting blade
has been removed from said incision.

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9. A surgical blade for use with a surgical tool for making an incision in scleral tissue of an eye, said surgical blade comprising:

5 a rotatable support arm having a first end capable of being coupled to a drive shaft of said surgical tool that is capable of rotating said rotatable support arm; and

a curved cutting blade having a first end detachably coupled to a second end of said rotatable support arm, said curved cutting blade having a second end that is capable of being
10 rotated by said surgical tool through said scleral tissue of said eye to make an incision having the form of a scleral pocket that is capable of receiving a scleral prosthesis;

wherein said curved cutting blade comprises:

a blade portion;
15 a detachable central portion that is detachable from said blade portion; and

a detachable tip that is detachable from said detachable central portion.

20 10. A surgical blade as claimed in Claim 9 wherein said curved cutting blade of said surgical blade is capable of making an incision in said scleral tissue that is approximately one and one half millimeters wide and approximately four millimeters

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long, said incision being located approximately four hundred
microns under a surface of said scleral tissue.

11. A surgical blade as claimed in Claim 9 wherein said
5 detachable central portion is a scleral prosthesis.

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12. A method for making an incision in scleral tissue of an eye to form a scleral pocket to receive a scleral prosthesis and for placing said scleral prosthesis within said incision, said method comprising the steps of:

5 placing on said scleral tissue of said eye a rotatable surgical blade of a surgical tool, said rotatable surgical blade comprising a rotatable support arm and a curved cutting blade having a first end detachably coupled to an end of said rotatable support arm, said curved cutting blade having a second end that
10 is capable of being rotated by said rotatable support arm through said scleral tissue of said eye to make an incision having the form of a scleral pocket;

holding said scleral tissue to restrain movement of said scleral tissue;

15 rotating said curved cutting blade in a forward direction to cause said curved cutting blade to pass through said scleral tissue to form said incision having said form of a scleral pocket;

20 detaching said curved cutting blade from said rotatable support arm while said curved cutting blade is located within said incision;

detaching a detachable tip portion of said curved cutting blade from a detachable central portion of said curved cutting

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blade while said detachable central portion is located within said incision; and

detaching a blade portion of said curved cutting blade from said detachable central portion while said detachable central
5 portion is located within said incision.

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13. A method as claimed in Claim 12 further comprising the step of:

using said detachable central portion as a scleral prosthesis when said detachable central portion is located within
5 said incision.

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14. A surgical blade for use with a surgical tool for making an incision in scleral tissue of an eye, said surgical blade comprising:

5 a rotatable support arm having a first end capable of being coupled to a drive shaft of said surgical tool that is capable of rotating said rotatable support arm; and

a curved cutting blade having a first end detachably coupled to a second end of said rotatable support arm, said curved cutting blade having a second end that is capable of being
10 rotated by said surgical tool through said scleral tissue of said eye to make an incision having the form of a scleral pocket that is capable of receiving a scleral prosthesis;

wherein said curved cutting blade comprises portions forming a conduit through said curved cutting blade; and

15 a scleral prosthesis slidably disposed within said conduit; and

a plunger slidably disposed within said conduit, said plunger capable of pushing said scleral prosthesis out of said conduit.

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15. A surgical blade as claimed in Claim 14 wherein said curved cutting blade of said surgical blade is capable of making an incision in said scleral tissue that is approximately one and one half millimeters wide and approximately four millimeters
5 long, said incision being located approximately four hundred microns under a surface of said scleral tissue.

16. A surgical blade as claimed in Claim 14 wherein said scleral prosthesis is capable of being filled with a fluid.

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17. A method for making an incision in scleral tissue of an eye to form a scleral pocket to receive a scleral prosthesis and for placing said scleral prosthesis within said incision, said method comprising the steps of:

5 placing on said scleral tissue of said eye a rotatable surgical blade of a surgical tool, said rotatable surgical blade comprising a rotatable support arm and a curved cutting blade having a first end detachably coupled to an end of said rotatable support arm, said curved cutting blade having a second end that
10 is capable of being rotated by said rotatable support arm through said scleral tissue of said eye to make an incision having the form of a scleral pocket;

 holding said scleral tissue to restrain movement of said scleral tissue;

15 rotating said curved cutting blade in a forward direction to cause said curved cutting blade to pass through said scleral tissue to form said incision having said form of a scleral pocket;

 detaching said curved cutting blade from said rotatable
20 support arm while said curved cutting blade is located within said incision;

 removing said curved cutting blade from said incision; and

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pushing a scleral prosthesis out of a conduit within said curved cutting blade into said incision when said curved cutting blade is being removed from said incision.

- 5 18. A method as claimed in Claim 17 further comprising the step of:

filling said scleral prosthesis with a fluid after said scleral prosthesis is located within said incision.